

In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Canceled)
2. (Canceled)
3. (Currently amended) The method of claim 9 [[2]], wherein each of the first plurality of calculated parameters ~~the at least one calculated parameter~~ is proportional to the at least one determined foot contact time of the user multiplied by ~~the~~ at least one determined heart rate of the user.
4. (Currently amended) The method of claim 9 [[2]], wherein the step (a) includes including the at least one determined performance parameter and the at least one determined variable physiological parameter in an equation having the performance parameter and the variable physiological parameter as variables therein.
5. (Canceled)
6. (Currently amended) The method of claim 4 [[5]], wherein foot contact time and heart rate are the only variables included in ~~an~~ the equation used to calculate each of the first plurality of calculated parameters.
7. (Currently amended) The method of claim 9 [[5]], wherein each calculated parameter is proportional to a foot contact time of the user multiplied by a determined heart rate of the user.
8. (Canceled)

9. (Currently amended) ~~The method of claim 5, further~~ A method, comprising steps of:

(a) determining at least one calculated parameter based upon at least one determined performance parameter of the user and at least one determined variable physiological parameter of the user, wherein the at least one determined performance parameter of the user includes at least one determined foot contact time of the user, and the at least one determined variable physiological parameter of the user includes at least one determined heart rate of the user;

(b) repeating the step (a) during a first outing to obtain a first plurality of calculated parameters, each of the first plurality of calculated parameters being calculated based upon a respective determined foot contact time of the user and a corresponding heart rate of the user;

(c) calculating an average value of the first plurality of calculated parameters;

(d) repeating the step (a) during a second outing to obtain a second plurality of calculated parameters, each of the second plurality of calculated parameters being calculated based upon a respective determined foot contact time of the user and a corresponding heart rate of the user;

(e) calculating an average value of the second plurality of calculated parameters; and

(f) comparing the average value of the second plurality of calculated parameters with the average value of the first plurality of calculated parameters to identify an increase or decrease in the user's fitness level.

10. (Currently amended) The method of claim 9 [[1]], wherein the step (a) is performed by at least one device supported by the user while the user is in locomotion on foot.

11. (Canceled)

12. (Currently amended) The method of claim 9 [[1]], wherein the at least one determined performance parameter of the user includes one of at least one determined speed of the user and at least one determined pace of the user, ~~and the at least one determined variable physiological parameter of the user includes at least one determined heart rate of the user.~~

13. (Currently amended) The method of claim 12 [[11]], wherein the step (a) is performed by at least one device supported by the user while the user is in locomotion on foot.

14. (Currently amended) The method of claim 9 [[1]], wherein the at least one determined performance parameter of the user includes at least one determined energy expenditure rate of the user, ~~and the at least one determined variable physiological parameter of the user includes at least one determined heart rate of the user.~~

15. (Original) The method of claim 14, wherein the step (a) is performed by at least one device supported by the user while the user is in locomotion on foot.

16.-20. (Canceled)

21. (Currently amended) ~~The method of claim 20;~~ A method, comprising a step of:
(a) identifying at least one of an existence of a non-zero grade of a surface and a value of the grade of the surface based upon at least one determined variable physiological parameter of a user in locomotion on foot on the surface;

wherein the at least one determined variable physiological parameter of the user includes at least one determined heart rate of the user;

wherein the step (a) includes a step of (a1) identifying the at least one of the existence of the non-zero grade of the surface and the value of the grade of the surface based upon at least one determined foot contact time of the user corresponding to the at least one determined heart rate of the user; and

wherein the step (a1) includes steps of:

determining a first parameter based upon a first determined foot contact time of the user and a corresponding first heart rate of the user, the first parameter being determined at a first time when the surface on which the user is in locomotion is level;
and

determining a second parameter based upon a second determined foot contact time of the user and a corresponding second heart rate of the user, the second parameter

being determined at a second time when the grade of the surface on which the user is in locomotion is unknown; and

comparing the second parameter with the first parameter to identify the at least one of the existence of the non-zero grade of the surface and the value of the grade of the surface at the second time.

22. (Original) The method of claim 21, wherein foot contact time and heart rate are the only variables included in an equation used to calculate the first and second parameters.

23. (Original) The method of claim 21, wherein an equation used to calculate the first and second parameters includes as a term therein the at least one determined foot contact time multiplied by the at least one determined heart rate.

24. (Currently amended) ~~The method of claim 20,~~ A method, comprising a step of:
(a) identifying at least one of an existence of a non-zero grade of a surface and a value of the grade of the surface based upon at least one determined variable physiological parameter of a user in locomotion on foot on the surface;
wherein the at least one determined variable physiological parameter of the user includes at least one determined heart rate of the user;
wherein the step (a) includes a step of (a1) identifying the at least one of the existence of the non-zero grade of the surface and the value of the grade of the surface based upon at least one determined foot contact time of the user corresponding to the at least one determined heart rate of the user; and

wherein the step (a1) includes steps of:

determining a first parameter by including a first determined foot contact time of the user and a corresponding first heart rate of the user in a first equation having foot contact time and heart rate as variables therein, the first parameter being determined at a first time when the surface on which the user is in locomotion is level; and

calculating the value of the grade of the surface at the first time by including the first parameter in a second equation defining a predetermined relationship between values of parameters yielded by the first equation and grade values.

25. (Original) The method of claim 24, wherein foot contact time and heart rate are the only variables included in the first equation.

26. (Original) The method of claim 24, wherein the first equation includes as a term therein the at least one determined foot contact time multiplied by the at least one determined heart rate.

27. (Currently amended) The method of claim 21 [[18]], wherein the step (a) is performed by at least one device supported by the user while the user is in locomotion on foot.

28. (Currently amended) The method of claim 24 [[19]], wherein the step (a) is performed by at least one device supported by the user while the user is in locomotion on foot.

29-43. (Canceled)

44. (Currently amended) ~~The system of claim 43,~~ A system, comprising:
at least one processor configured to identify at least one of an existence of a non-zero grade of a surface and a value of the grade of the surface based upon at least one determined variable physiological parameter of a user in locomotion on foot on the surface, wherein the at least one determined variable physiological parameter of the user includes at least one determined heart rate of the user; and
at least one sensor that determines the heart rate of the user while the user is in locomotion on foot;
wherein the at least one processor is further configured to identify the at least one of the existence of the non-zero grade of the surface and the value of the grade of the surface based

upon at least one determined foot contact time of the user corresponding to the at least one determined heart rate of the user; and

wherein the at least one processor is further configured to determine a first parameter based upon a first determined foot contact time of the user and a corresponding first heart rate of the user, the first parameter being determined at a first time when the surface on which the user is in locomotion is level, to determine a second parameter based upon a second determined foot contact time of the user and a corresponding second heart rate of the user, the second parameter being determined at a second time when the grade of the surface on which the user is in locomotion is unknown, and to compare the second parameter with the first parameter to identify the at least one of the existence of the non-zero grade of the surface and the value of the grade of the surface at the second time.

45. (Original) The system of claim 44, wherein the at least one processor is configured such that foot contact time and heart rate are the only variables included in an equation used to calculate the first and second parameters.

46. (Original) The system of claim 44, wherein the at least one processor is configured such that an equation used to calculate the first and second parameters includes as a term therein the at least one determined foot contact time multiplied by the at least one determined heart rate.

47. (Currently amended) ~~The system of claim 41,~~ A system, comprising:
at least one processor configured to identify at least one of an existence of a non-zero grade of a surface and a value of the grade of the surface based upon at least one determined variable physiological parameter of a user in locomotion on foot on the surface, wherein the at least one determined variable physiological parameter of the user includes at least one determined heart rate of the user; and
at least one sensor that determines the heart rate of the user while the user is in locomotion on foot;

wherein the at least one processor is further configured to identify the at least one of the existence of the non-zero grade of the surface and the value of the grade of the surface based upon at least one determined foot contact time of the user corresponding to the at least one determined heart rate of the user; and

wherein the at least one processor is further configured to determine a first parameter by including a first determined foot contact time of the user and a corresponding first heart rate of the user in a first equation having foot contact time and heart rate as variables therein, the first parameter being determined at a first time when the surface on which the user is in locomotion is level, and to calculate the value of the grade at the first time by including the first parameter in a second equation defining a predetermined relationship between values of parameters yielded by the first equation and grade values.

48. (Original) The system of claim 47, wherein the at least one processor is configured such that foot contact time and heart rate are the only variables included in the first equation.

49. (Original) The system of claim 47, wherein the at least one processor is configured such that the first equation includes as a term therein the at least one determined foot contact time multiplied by the at least one determined heart rate.

50-91. (Canceled)